WHAT IS CLAIMED IS:

1. An adjustable iris-diaphragm controller comprising:

an aperture-defining unit including

a brushless direct current (DC) motor, and

an iris coupled to and associated operably with said DC motor for defining an aperture that corresponds to an angular position of said DC motor;

a Hall sensor coupled to and associated operably with said DC motor so as to detect the angular position of said DC motor and to provide a first output voltage corresponding to the angular position detected thereby;

an aperture-setting unit operable so as to set a reference aperture and to provide a second output voltage corresponding to the reference aperture;

a current source for supplying electric current; and

a control module including

a differential circuit coupled electrically to said Hall sensor and said aperture-setting unit, said differential circuit receiving the first and second output voltages, and providing a third output voltage corresponding to the first and second output voltages,

an integrator coupled electrically to said differential circuit, said integrator receiving the third output voltage and providing a control output signal corresponding to the third output voltage, and

a current-limiting circuit coupled electrically to said DC motor, said integrator, and said current source,

said current-limiting circuit receiving the control output signal, and limiting supply of the electric current from said current source to said DC motor in accordance with the control output signal for adjusting rotational speed of said DC motor,

wherein when said DC motor is rotated to an angular position corresponding to the reference aperture, said current-limiting circuit inhibits the supply of the electric current from said current source to stop further rotation of said DC motor, thereby maintaining the aperture defined by said iris at the reference aperture.

2. The adjustable iris-diaphragm controller as claimed in Claim 1, wherein said differential circuit includes a first differential amplifier coupled to said Hall sensor and operable so as to receive and amplify the first output voltage, and a second differential amplifier coupled to said first differential amplifier and said aperture-setting unit and operable so as to amplify a difference between the first output voltage amplified by said first differential amplifier and the second output voltage from said aperture-setting unit for producing the third output voltage.

3. The adjustable iris-diaphragm controller as claimed in Claim 1, wherein said current-limiting circuit includes a variable impedance component.

4. The adjustable iris-diaphragm controller as claimed in Claim 3, wherein said variable impedance component

is a transistor.

5. The adjustable iris-diaphragm controller as claimed in Claim 4, wherein said transistor has a first terminal coupled to said integrator, a second terminal coupled to said current source, and a third terminal coupled to said DC motor.

6. The adjustable iris-diaphragm controller as claimed in Claim 1, wherein said aperture-setting unit is a manually operated mechanism that includes

a voltage source,

a plurality of resistors, each of which is coupled to said voltage source, has an electrical resistance distinct from those of the other ones of said resistors, and provides a corresponding voltage drop thereat, and

a manually operable switch for coupling a selected one of said resistors to said control module so that the voltage drop at the selected one of said resistors serves as the second output voltage.

7. The adjustable iris-diaphragm controller as claimed in Claim 1, wherein said aperture-setting unit is an automatically operated mechanism which includes a processor that receives and processes an input brightness signal to result in the second output voltage.

8. A control module for controlling an aperture-defining unit of an adjustable iris-diaphragm controller, the aperture-defining unit including a motor and an iris coupled to and associated operably with the motor to

define an aperture that corresponds to an angular position of the motor, the adjustable iris-diaphragm controller including a Hall sensor coupled to and operably associated with the motor so as to detect the angular position of the motor and to provide a first output voltage corresponding to the angular position detected thereby, an aperture-setting unit operable so as to set a reference aperture and to provide a second output voltage corresponding to the reference aperture, and a current source for supplying electric current, said control module comprising:

a differential circuit adapted to be coupled electrically to the Hall sensor and the aperture-setting unit so as to receive the first and second output voltages therefrom, said differential circuit providing a third output voltage in response to the first and second output voltage received thereby,

an integrator coupled electrically to said differential circuit, said integrator receiving the third output voltage and providing a control output signal corresponding to the third output voltage, and

a current-limiting circuit adapted to be coupled electrically to the motor and the current source, and coupled electrically to said integrator, said current-limiting circuit receiving the control output signal, and limiting supply of the electric current from the current source to the motor in accordance with the

control output signal for adjusting rotational speed of the motor,

whereby when the motor is rotated to an angular position corresponding to the reference aperture, said current-limiting circuit inhibits the supply of the electric current from the current source to stop further rotation of the motor, thereby maintaining the aperture defined by the iris at the reference aperture.

9. The control module as claimed in Claim 8, wherein said differential circuit includes a first differential amplifier adapted to receive and amplify the first output voltage from the Hall sensor, and a second differential amplifier coupled to said first differential amplifier and operable so as to amplify a difference between the first output voltage amplified by said first differential amplifier and the second output voltage for producing the third output voltage.

10. The control module as claimed in Claim 8, wherein said current-limiting circuit includes a variable impedance component.

11. The control module as claimed in Claim 10, wherein said variable impedance component is a transistor.

12. The control module as claimed in Claim 11, wherein said transistor has a first terminal coupled to said integrator, a second terminal adapted to be coupled to the current source, and a third terminal adapted to be coupled to the motor.